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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,067	02/12/2002	Weyl K. Wang	8378/86334	7460
24628	7590	01/12/2005	EXAMINER	
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			WANG, QUAN ZHEN	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/075,067	Applicant(s) WANG ET AL.	
	Examiner Quan-Zhen Wang	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the circle on left hand side and the triangle on the right hand side in fig. 1 are not labeled.

The vertical axis in fig. 5 is not properly labeled. It is not clear what "AMOUNT AWAY FROM TARGET" means.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites " ... emit signals at ..., different output parameter values ..." in line 7. But the instant application does not teach what it means by the "output

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parameter values". Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 1-5.

Claim 6 recites "a plurality of channel based radiant energy beams" in line 6, "for a selected parameter" in line 7. But neither "channel based radiant energy beams" nor "a selected parameter" are described in the instant application. Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 6-9.

Claim 10 recites "setting an output parameter" in line 5. But the instant application does not teach what it means by the "output parameter", consequently it does not teach how to set the "output parameter". Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 10-20.

Claim 21 recites "a plurality of optical transmission elements wherein each element includes, an optical fiber; a first amplifier coupled to an input end of the fiber and a second amplifier coupled to an output end of the fiber wherein elements are coupled so as to provide one or more sets of up to S cascaded signal conducting elements;" in lines 1-7. But the instant application does not teach what it means by "optical transmission elements". The application does not clearly disclose the relationship between the amplifiers and the "elements". Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 21-24.

Claim 25 recites “an optical network comprising: a plurality of optical links; a plurality of amplifiers coupled to respective links wherein at least some of the amplifiers exhibit common gain profiles; a plurality of optical transmitters coupled to an input of a selected link; and pre-emphasis adjustment circuitry coupled to the members of the plurality of transmitters whereby each transmitter's output power is set in accordance with an inverse of the gain profile.” in lines 1-9. But the instant application does not teach how the “plurality of transmitters” are coupled to “an input of a selected link”, and how many amplifiers the signals from the “plurality of transmitters” go through. Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 25-29.

Claim 30 recites “adjusting an output parameter profile” in lines 8-9. But the instant application does not teach what is the “output parameter profile” and how to adjust the “output parameter profile”. Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 30.

Claim 31 recites “a pre-emphasis method comprising: establishing a gain profile across a range of wavelengths for at least one multi-channel light path; forming an inverse of the gain profile; establishing the widest acceptable receiver input power variation and determining a maximum number of allowable cascaded light paths in response thereto; raising the inverse of the gain profile to an exponent which corresponds to the maximum allowable number of light paths to form a processed inverse profile; and setting transmitter output power in accordance with the inverse profile.” in lines 1-12. However, the instant application does not define what is “a range

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of wavelengths", how the gain profile of "a range of wavelengths" can be used for the pre-emphasis method. The application does not teach how to raise "the inverse of the gain profile to an exponent". Furthermore, it is not clear that the "transmitter output powers" are set "in accordance with" what "inverse profile". Therefore, the disclosure fails to enable a person skilled in the art to make and use the claimed invention as recited in claims 31.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-24, 27, and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the members of the plurality emit signals at predetermined, different output parameter values" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the transmitter output power levels" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "a selected parameter" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the members of plurality" in line 4. There are more than one "plurality" introduced before.

Claim 6 recites the limitation "a plurality of channel based radiant energy beams" in line 6. It is not clear what "channel based radiant energy beams" mean.

Claim 7 recites the limitation "... an inverse of common gain profile raised to an exponent ..." in line 3. It is not clear how to raise the "inverse of common gain profile" to an exponent.

Claim 10 recites the limitation "setting an output parameter of ..." in line 5. It is not clear what the "parameter" means.

Claim 11 recites the limitation "in the establishing step" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites "... setting an output parameter for ..." in line 1. It is not clear what the "output parameter" means.

Claim 16 recites the limitation "... the providing step ..." in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "... signal conducting elements;" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 27 recites the limitation "the exponent" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "... on the order of 2SdB" in line 2. It is not clear what "2SdB" means.

Claim 30 recites "A transmitter module for use in an optical network wherein members of a first plurality of amplifiers and members of a second plurality of amplifiers couple signals between optical spans wherein an amplifier from each plurality is associated with each span" in lines 1-4. It is not clear how the system is configured.

Claim 31 recites the limitation "... raising the inverse of the gain profile to an exponent ...". It is not clear how to raise the "inverse of common gain profile" to "an exponent".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Zyskind et al. (Chapter 2 Erbium-Doped Fiber Amplifiers for Optical Communications, in Optical Fiber Telecommunications IIIB, I. Kaminow and T. Koch ed., Academic Press, San Diego, 1977).

Regarding claims 1-9, 21-29, and 31, as they are understood in view of the above 112 problems, Kaminow discloses a communication network (fig. 2.6, page 29) comprising: a plurality of optical links, a plurality of amplifiers, and a plurality of transmitters. Kaminow further teach that net gain shape of the system can be dealt with using pr-emphasis: adjusting the transmitter powers of the individual channels so that the input channel power spectrum is complementary to the gain spectrum of the amplifier chain, and therefore the output power from the system are equalized (paragraph 1, page 39). The system taught by Kaminow inherently has circuitry coupled to the emitters for adjusting the output powers. The system taught by Kaminow fully meets Applicant's claimed limitations.

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Claims 10-20, and 30 are method and process claims of the system claims 1-9, 21-29, and 31.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taga et al. (U.S. Patent US 5,790,289) disclose a WDM communication method with pre-emphasis technique; Terahara et al. (U.S. Patent US 6,654,561 B1) discloses a communication system using pre-emphasis methods; DaSilva et al. (U.S. Patent US 6,674,557 B1) discloses a WDM system using pre-emphasis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw



HANH PHAN
PRIMARY EXAMINER